



Packet No.: 95-346

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

NAYLER

Serial No.: 09/634,834

Filed: August 4, 2000

For: ARRANGEMENT FOR REDUCING TRANSMITTED JITTER

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Group Art Unit: 2631

Examiner: BURD, Kevin Michael

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Technology Center 2600

RESPONSE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the non-final Official Action mailed May 6, 2004, Applicant hereby submits the following remarks.

Reconsideration and allowance of the above-referenced application are respectfully requested. Claims 1-17 are unchanged and remain pending in the application.

Claims 1 and 12 stand rejected under 35 USC §103 in view of U.S. Patent No. 5,041,798 to Moorman et al. in view of U.S. Patent No. 6,188,341 to Taniguchi et al.. This rejection is respectfully traversed.

Claims 1 and 12 specify a transmission system configured for outputting a set of waveform samples starting at a transmission time instant according to a transmit clock. In

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particular, claims 1 and 12 each specify determining a phase error between the transmit clock and a prescribed transmit clock relative to the transmission time instant, and outputting a selected waveform sample set based on the determined phase error.

Moreover, claims 1 and 12 specify that the selected waveform sample set is formed by stored waveform samples: claim 1 specifies that the waveform sample set has samples of a prescribed waveform relative to a corresponding phase offset; claim 12 specifies a pulse shape table circuit configured for outputting a selected waveform sample set of a prescribed waveform relative to a selected phase offset in response to an address signal *and* a selection signal.

Hence, the transmission system selects a set of waveform samples representing a prescribed waveform, relative to a corresponding phase offset, based on the determined phase error. Consequently, precise phase correction can be implemented in a digital circuit with minimal complexity. These and other features are neither disclosed nor suggested in the applied prior art.

As admitted in the Official Action, Moorman et al. does not disclose outputting a selected waveform sample set stored in a table according the computed phase error. Moreover, Moorman et al. neither discloses nor suggests determining a phase error between the transmit clock and a prescribed transmit clock relative to the transmission time instant.

Further, the Official Action fails to provide any reference to the claimed “transmission time instant”, let alone the feature of determining the phase error between the transmit clock and the prescribed transmit clock relative to the transmission time instant. Rather, the Official

Action merely provides a description of Moorman et al. that amply demonstrates that Moorman et al. is non-analogous art:

Regarding claims 1 and 12, Moorman discloses a system for steering a clock to a higher precision reference clock. The clocks are periodically compared to provide a phase error signal. A correction signal is applied and the frequency of the clock is changed to match that of the reference clock as stated in column 2, lines 36-49.

(Office Action at paragraph 5, pages 2-3).

The Official Action applies Taniguchi et al. for the supposed teaching of using a computed phase error to form an address which is used to access an output signal from from a lookup table which is used to carry out a corrected computation.

The Official Action fails to address the claimed feature that the phase error is determined between the transmit clock and a prescribed transmit clock, relative to the transmission time instant, where the transmission system outputs the set of waveform samples starting at the transmission time instant according to the transmit clock.

Hence, the Official Action fails to establish a prima facie case of obviousness, since the Official Action fails to demonstrate that all the claim limitations are taught or suggested by the prior art. See MPEP §2143.03.

Further, Moorman et al. is non-analogous art because it is not within the field of the inventor's endeavor, namely implementation of pulse position modulation communications systems, for example home networking physical layer transceivers. Rather, Moorman et al. is concerned with synchronizing clock sources between multicomputer complexes having computers that are widely separated by distances of up to several kilometers (see col. 1, lines 5-

28). Further, Moorman et al. is not reasonably pertinent to the particular problem with which the inventor was involved, namely minimizing jitter in transmit waveform communications systems that use a single transmit clock, such as a digital transmission system (see, e.g., page 2, lines 17-21 of specification). Moorman et al. provides no disclosure or suggestion of identifying a phase error between a transmit clock and a prescribed transmit clock relative to the transmission time instant, and as such is non-analogous art. In re Wood, 202 USPQ 171, 174 (CCPA 1979).

Taniguchi et al. describes an encoder interpolation circuit for correcting interpolation data (θ'). In particular, Taniguchi et al. is directed to detecting positions of a table and a motor of a machine tool of an NC apparatus, where a rotary-type pulse encoder attached to the motor shaft and a linear-type pulse encoder attached to the worktable are used to detect movement and moving speed of a moving body: as the moving body moves, the encoders generate an A-phase sine-wave signal, and a B-phase cosine-wave signal.

The interpolation data (θ') is computed based on the inverse tangent of the two detected signals, and corrected by correction data ($\Delta\theta$) to obtain interpolation data (θ) that includes no interpolation error (see col. 1, lines 6-25 and col. 3, line 49 to col. 4, line 18).

Further, column 11, line 56 to column 12, line 6 merely describes a “second embodiment”, where correction data ($\Delta\theta$) is stored in a correction data storage unit 4p2, enabling the retrieval thereof based on input values (θ' , k), where k represents an amplitude ratio between the encoder signals V_A and V_B . (See col. 4, lines 43-67 and col. 6, lines 23-32). Hence, the correction data storage unit 4p2 is used in place of computing the expression (17) specified at col. 10, lines 40-42 (col. 10, line 65 to col. 11, line 5). Hence, the data storage unit 4p2 is stored

with correction data ($\Delta\theta$) corresponding to combinations of various phase errors P_d and the interpolation data (θ') (see Fig. 10 and col. 11, lines 16-22).

Hence, Taiguchi et al. neither discloses nor suggests the claimed outputting a selected waveform sample set, where the waveform sample set has samples of a prescribed waveform relative to a corresponding phase offset. Rather, Taniguchi et al. discloses a memory that stores correction data ($\Delta\theta$) that is used to correct for interpolation data (θ') in order to output interpolation data (θ) that includes no interpolation error.

As such, Taiguchi et al. also is non-analogous art it is not within the field of the inventor's endeavor, but is concerned with obtaining corrected interpolation data. Further, Taiguchi et al. is not reasonably pertinent to the particular problem with which the inventor was involved, namely minimizing jitter in a digital transmission system by using selected waveform sample sets. Taiguchi et al. provides no disclosure or suggestion of identifying a phase error between a transmit clock and a prescribed transmit clock relative to the transmission time instant, or transmitting a set of waveform samples for use in a transmission system, and as such is non-analogous art. In re Wood, 202 USPQ 171, 174 (CCPA 1979).

Hence, the Official Action fails to establish a prima facie case of obviousness: the Official Action fails to identify how either reference, singly or in combination, discloses or suggests outputting a waveform sample set, as claimed.

An evaluation of obviousness must be undertaken from the perspective of one of ordinary skill in the art addressing the same problems addressed by the applicant in arriving at the claimed invention. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, 23 USPQ 416, 420 (Fed. Cir.

1986), cert. denied, 484 US 823 (1987). Thus, the claimed structures and methods cannot be divorced from the problems addressed by the inventor and the benefits resulting from the claimed invention. In re Newell, 13 USPQ2d 1248, 1250 (Fed. Cir. 1989).

None of the applied references even begin to address the problems contemplated by the inventor, let alone the solutions and advantages attained by the invention as claimed.

For these and other reasons, the §103 rejection of claims 1 and 12 should be withdrawn.

The indication of allowable subject matter in claims 2-11 and 13-17 is acknowledged and appreciated. It is believed these claims are allowable in view of the foregoing.

In view of the above, it is believed this application is in condition for allowance, and such a Notice is respectfully solicited.

To the extent necessary, Applicant petitions for an extension of time under 37 C.F.R. 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including any missing or insufficient fees under 37 C.F.R. 1.17(a), to Deposit Account No. 50-0687, under Order No. 95-346, and please credit any excess fees to such deposit account.

Respectfully submitted,

Manelli Denison & Selter, PLLC



Leon R. Turkevich
Registration No. 34,035

Customer No. 20736
Date: August 6, 2004



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Form: PTO/SB/17 (Modified)

REPLY/AMENDMENT FEE TRANSMITTAL	Attorney Docket No.	95-346	
	Application Number	09/634,834	
	Filing Date	August 4, 2000	
	First Named Inventor	NAYLER	
	Group Art Unit	2631	
AMOUNT ENCLOSED	\$ 0	Examiner Name	BURD, Kevin Michael

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FEE CALCULATION (fees effective 10/01/2003)

CLAIMS AS AMENDED	Claims Remaining After Amendment	Highest Number Previously Paid For	Number Extra	Rate	Calculations
TOTAL CLAIMS	17	20	0 ⁽³⁾	X \$18.00 =	\$0
INDEPENDENT CLAIMS	2	3	0	X \$86.00 =	\$0
Since an Official Action set an <u>original</u> due date of _____, petition is hereby made for an extension to cover the date this reply is filed for which the requisite fee is enclosed (1 month (\$110); 2 months (\$420); 3 months (\$950); 4 months (\$1,480); 5 months (\$2,010)):					\$0
If Statutory Disclaimer under Rule 20(d) is enclosed, add fee (\$110)					+ \$0
Total of above Calculations =					\$0
Reduction by 50% for filing by small entity (37 CFR 1.9, 1.27 & 1.28)					-
TOTAL FEES DUE =					\$0

- (1) If entry (1) is less than entry (2), entry (3) is "0".
(2) If entry (2) is less than 20, change entry (2) to "20".
(4) If entry (4) is less than entry (5), entry (6) is "0".
(5) If entry (5) is less than 3, change entry (5) to "3".

METHOD OF PAYMENT

- ☐ Check enclosed as payment.
- ☐ Charge "TOTAL FEES DUE" to the Deposit Account No., below.

AUTHORIZATION

- ☒ If the above-noted "AMOUNT ENCLOSED" is not correct, the Commissioner is hereby authorized to credit any overpayment or charge any additional fees under 37 CFR 1.16 or 1.17 necessary to maintain pendency of the present application to:

Deposit Account No.: 50-0687

OrderNo.: (Client/Matter) 95-346

SUBMITTED BY: MANELLI DENISON & SELTER PLLC

Typed Name	Leon R. Turkevich	Reg. No.	34,035
Signature		Date	August 6, 2004